Notice of Allowability	Application No.	Applicant(s)	
	10/828,424	EDMONDSON, JERRY M.	
	Examiner	Art Unit	
	Matthew O. Savage	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the amendment filed on 3-13-06*.

2. ☒ The allowed claim(s) is/are *16-26 renumbered 1-11, respectively*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Matthew O Savage
Primary Examiner
Art Unit: 1724

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Jerry M. Edmondson on 5-26-06.

16. (Currently Amended) An oil and water separator [[made more compact and efficient by unique internal structures]] comprising a horizontal cylindrical vessel closed on both ends with an inlet conduit [[at]] adjacent one end for receiving a constant flowing mixture of oil and water and an oil outlet conduit in [[the]] an upper region of the other end for discharging water free oil from said vessel and a water outlet conduit in [[the]] a lower region of the other end for discharging [[water free oil and]] oil free water from said vessel, and within said vessel intersecting said constant flowing mixture, a permeable baffle constructed in such a way as to apply [[the]] a principle of capillary attraction to cause [[the]] non-continuous phase fluids to be separated from [[the]] continuous phase fluids and, on a downstream side of [[in cooperation with]] said permeable baffle, an upper [[a]] permeable barrier disposed transverse to and in a horizontal oil flow path of the separator and a lower permeable barrier disposed below said upper permeable barrier and transverse to and in a horizontal water flow path in the separator, wherein [[whereupon the]] a permeability of said upper permeable barrier and a permeability of said lower permeable barrier may be discretely adjusted relative

one another [[on various locations of same said barrier]] to accommodate [[the]] a variation of flow characteristics of said oil and said water [[maintaining a relative plug flow of each the said oil and said water thereby improving the separation process as the said mixture travels through the said vessel]].

17. (Currently Amended) The separator as described by claim 16 wherein the said [[cooperating]] upper and lower permeable barriers [[is]] are in the form of [[a]] separate louvered structures [[whereupon the]] each including louvers that are rotatable and discretely variable in each of [[the areas through which]] the said oil flow path and the said water flow path.

18. (Currently Amended) The separator as described by claim 17 where there are handles for rotating the louvers external to said separator, and wherein the handles are connected to the rotatable louvered structures in a manner that the position of said handles indicate the position of said louvers.

19. (Currently Amended) The separator as described by claim 16 where in upstream relationship to said permeable baffle and said [[cooperating]] upper and lower permeable barriers there may be placed in the path of said constant flowing mixture a heating element for the purpose of heating said mixture to reduce its viscosity.

20. (Currently Amended) The separator of claim 19 where said heating element is in the shape of a horizontally oriented "U" with a burner attached on one end of said "U" and an exhaust stack attached on the other end, and constructed so that at least a portion of the "U" side of said heating element to which said exhaust stack is attached has a multi-tube construction to increase the heat exchange surface on [[that]] said portion of the "U" side of said heating element.

21. (Currently Amended) An oil and water separator within which a constant flowing mixture of oil and water is treated to separate said oil and said water [[utilizing the well known technology of establishing an electric field inside of said separator through which the said mixture passes to cause coalescence of said water mixed with said oil for faster separation]] comprising a horizontal cylindrical vessel closed on both ends with an inlet conduit [[at]] adjacent one end for receiving said mixture and an oil outlet conduit in [[the]] an upper region of the other end establishing [[the]] a top level of the oil and for delivering water free oil from said separator and a water outlet conduit in [[the]] a lower region of said other end for delivering oil free water from said separator, and within said separator, a distinct interface of the said oil and said water, [[said vessel made more compact and efficient by the incorporation of unique internal structures including intersecting said constant flowing mixture in proximity of said electric field]] a first solid partial baffle having its top edge below said top level of said oil and its bottom edge below said distinct interface and a second solid partial baffle in downstream relationship to said first baffle with its top edge above said top level of said oil and its

bottom edge above said distinct interface, the purpose of said first and second solid partial baffles being to route said constant flowing mixture in a downward direction through [[said electric field and traversing the]] a cross section of [[the]] a space formed by said first baffle and said second baffle and the sidewall of said cylindrical vessel, at least one permeable [[baffle]] barrier disposed in said space traversing said cross section [[upon which the]] having a permeability that can be regulated to adjust for variations in [[the]] flow characteristics of said constant flowing mixture.

24. (Currently Amended) The oil and water separator of claim 21 wherein there are two permeable barriers one above the other traversing said cross section of said space formed by said first and second solid partial baffles and said side wall of said vessel, the uppermost permeable barrier located [[at]] adjacent said top edge of said first baffle and the lowermost permeable barrier located [[at]] adjacent said bottom edge of said second baffle.

26. (Currently Amended) An oil and water separator receiving a constant flowing mixture of oil and water for the purpose of separating said mixture and delivering from said separator water free oil and oil free water [[wherein the well known technology of passing said mixture through an electric field to coalesce the water for faster separation is utilized made more compact and efficient through the application of novel internal structures]] comprising a horizontal cylindrical vessel closed on both ends with an inlet [[near]] adjacent one end and an oil outlet in [[the]] an upper region of said vessel at the

other end for establishing [[the]] a top level of the oil and discharging said oil and in the lower region of said vessel at said other end a water outlet and within said vessel is maintained a distinct water and oil interface, [[and intersecting the flowing mixture in proximity to said electric field]] a first solid partition having its top edge below the said top level of the oil and its bottom edge below the said water and oil interface and a second solid partition having its top edge above said top level of the oil and its bottom edge above the said water and oil interface, and traversing [[the]] a cross section of [[the]] a space formed by the said first and second solid partitions and the sidewall of the said vessel, two permeable barriers of rotatable louver construction positioned one above the other with the top permeable barrier located [[at]] adjacent the top edge of said first partition and the lower permeable barrier located [[at]] adjacent the bottom edge of said second partition, said louver structure being connected to a handle that is external to said vessel side wall in a manner that said louvers can be rotated by said handle and said handle will indicate the angle to which the louvers are rotated, and in downstream relationship to said first and second solid partitions in the flow path of said constant flowing mixture, a permeable [[barrier]] baffle constructed in a manner to apply [[the]] a principle of capillary attraction and in cooperation with the said permeable [[barrier]] baffle, a permeable barrier of rotatable louver construction having the louvers connected to handles exterior to said vessel side wall in a manner that said louvers can be independently rotated using said handles to discretely vary the permeability of said barrier at various areas of said barrier to compensate for different flow characteristics of

said constant flowing mixture with said handle indicating the angle to which the louver is rotated.

The following paragraphs have been added after the sole paragraph on page 4 of the specification:

-- The present invention provides an oil and water separator including a horizontal cylindrical vessel closed on both ends with an inlet conduit adjacent one end for receiving a constant flowing mixture of oil and water and an oil outlet conduit in an upper region of the other end for discharging water free oil from said vessel and a water outlet conduit in a lower region of the other end for discharging oil free water from said vessel, and within said vessel intersecting said constant flowing mixture, a permeable baffle constructed in such a way as to apply a principle of capillary attraction to cause non-continuous phase fluids to be separated from continuous phase fluids and, on a downstream side of said permeable baffle, an upper permeable barrier a permeability of said upper permeable barrier and a permeability of said lower permeable barrier may be discretely adjusted relative one another to accommodate a variation of flow characteristics of said oil and said water. The upper and lower permeable barriers are in the form of separate louvered structures each including louvers that are rotatable and discretely variable in each of the said oil flow path and the said water flow. Handles can be provided for rotating the louvers external to said separator, and wherein the handles are connected to the rotatable louvered structures in a manner that the position of said handles indicate the position of said louvers. In upstream relationship to said permeable

baffle and said upper and lower permeable barriers, there may be placed in the path of said constant flowing mixture a heating element for the purpose of heating said mixture to reduce its viscosity. The heating element is in the shape of a horizontally oriented "U" with a burner attached on one end of said "U" and an exhaust stack attached on the other end, and constructed so that at least a portion of the "U" side of said heating element to which said exhaust stack is attached has a multi-tube construction to increase the heat exchange surface on said portion of the "U" side of said heating element.

The invention further provides an oil and water separator within which a constant flowing mixture of oil and water is treated to separate said oil and said water including a horizontal cylindrical vessel closed on both ends with an inlet conduit adjacent one end for receiving said mixture and an oil outlet conduit in an upper region of the other end establishing a top level of the oil and for delivering water free oil from said separator and a water outlet conduit in a lower region of said other end for delivering oil free water from said separator, and within said separator, a distinct interface of the said oil and said water, a first solid partial baffle having its top edge below said top level of said oil and its bottom edge below said distinct interface and a second solid partial baffle in downstream relationship to said first baffle with its top edge above said top level of said oil and its bottom edge above said distinct interface, the purpose of said first and second solid partial baffles being to route said constant flowing mixture in a downward direction through a cross section of a space formed by said first baffle and said second baffle and the sidewall of said cylindrical vessel, at least one permeable barrier

disposed in said space traversing said cross section having a permeability that can be regulated to adjust for variations in flow characteristics of said constant flowing mixture. Located within said vessel and in upstream relationship to said first and second solid partial baffles within the flow path of said constant flowing mixture of oil and water a horizontally oriented U shaped fire tube with a burner attached to one end and an exhaust stack on the other end and including on the portion of the of said fire tube to which said exhaust stack is attached a multi-tube section for the purpose of increasing the heat exchange surface area on said section. Traversing the flow path of said constant flowing mixture of oil and water and in downstream relationship to said first and second solid partial baffles a permeable baffle constructed in a manner to apply the principle of capillary action in cooperation with a permeable barrier upon which the permeability is discretely adjustable in various locations of same said permeable barrier to compensate for variations in the flow characteristics of said constant flowing mixture. There are two permeable barriers one above the other traversing said cross section of said space formed by said first and second solid partial baffles and said side wall of said vessel, the uppermost permeable barrier located adjacent said top edge of said first baffle and the lowermost permeable barrier located adjacent said bottom edge of said second baffle.

The invention additionally provides an oil and water separator receiving a constant flowing mixture of oil and water for the purpose of separating said mixture and delivering from said separator water free oil and oil free water including a horizontal cylindrical vessel closed on both ends with an inlet adjacent one end and an oil outlet in

an upper region of said vessel at the other end for establishing a top level of the oil and discharging said oil and in the lower region of said vessel at said other end a water outlet and within said vessel is maintained a distinct water and oil interface, a first solid partition having its top edge below the said top level of the oil and its bottom edge below the said water and oil interface and a second solid partition having its top edge above said top level of the oil and its bottom edge above the said water and oil interface, and traversing a cross section of a space formed by the said first and second solid partitions and the sidewall of the said vessel, two permeable barriers of rotatable louver construction positioned one above the other with the top permeable barrier located adjacent the top edge of said first partition and the lower permeable barrier located adjacent the bottom edge of said second partition, said louver structure being connected to a handle that is external to said vessel side wall in a manner that said louvers can be rotated by said handle and said handle will indicate the angle to which the louvers are rotated, and in downstream relationship to said first and second solid partitions in the flow path of said constant flowing mixture, a permeable baffle constructed in a manner to apply a principle of capillary attraction and in cooperation with the said permeable baffle, a permeable barrier of rotatable louver construction having the louvers connected to handles exterior to said vessel side wall in a manner that said louvers can be independently rotated using said handles to discretely vary the permeability of said barrier at various areas of said barrier to compensate for different flow characteristics of said constant flowing mixture with said handle indicating the angle to which the louver is rotated. --.

The following is an examiner's statement of reasons for allowance:

Fenwick is considered the closest prior art with respect to independent claim 16, however, the reference fails to teach or suggest the upper and lower permeable barriers having permeabilities that can be discretely adjusted relative to one another as recited in instant claim 16.

Edmundson '992 is considered the closest prior art with respect to independent claims 21 and 26, however, the reference fails to teach or suggest at least one permeable barrier disposed in said space traversing said cross section having a permeability that can be regulated to adjust for variations in flow characteristics of the constant flowing mixture as recited in instant claim 21, or the limitation of, traversing a cross section of a space formed by the first and second solid partitions and the sidewall of the the vessel, two permeable barriers of rotatable louver construction positioned one above the other with the top permeable barrier located adjacent the top edge of the first partition and the lower permeable barrier located adjacent the bottom edge of the second partition as recited in instant claim 26.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew O. Savage whose telephone number is (571) 272-1146. The examiner can normally be reached on Monday-Friday, 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

M. Savage

Matthew O Savage
Primary Examiner
Art Unit 1724

mos
May 26, 2006

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MS

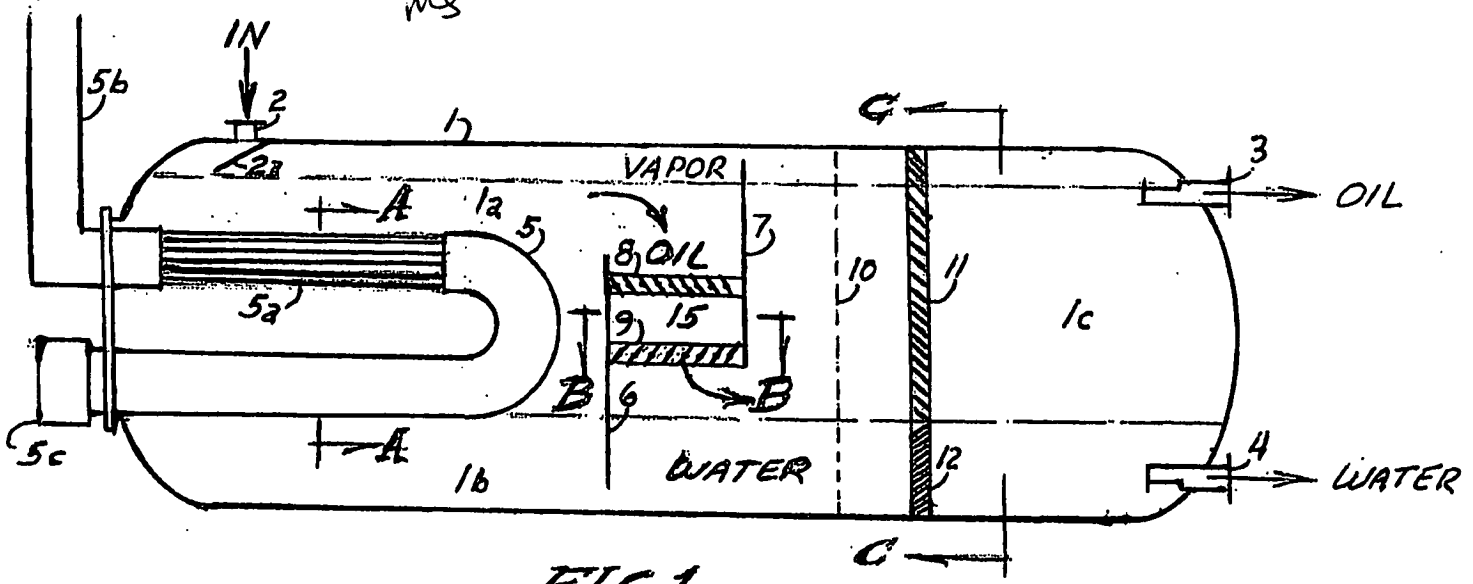
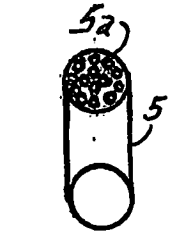


FIG. 1



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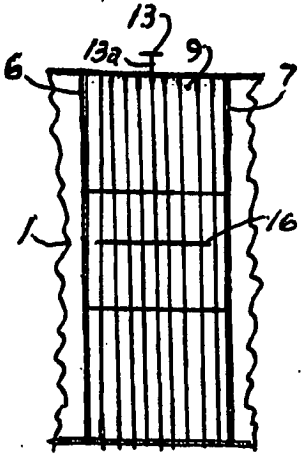

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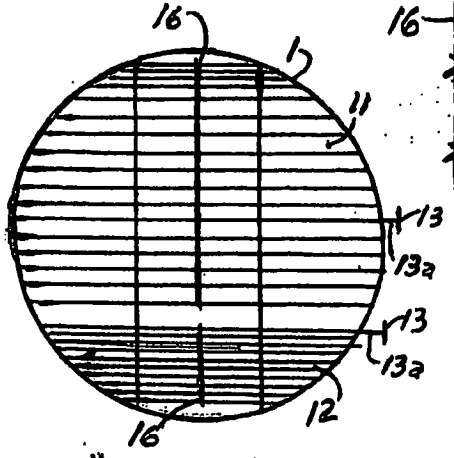

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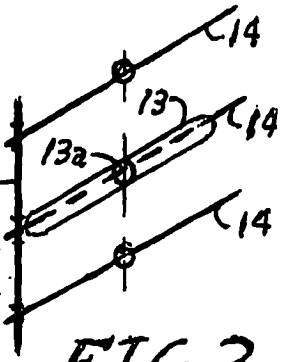

FIG. 2